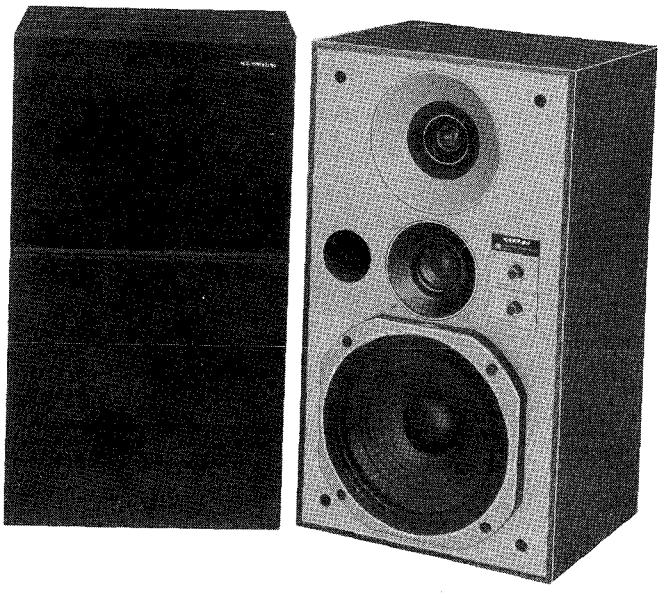
ORDER NO. SD7711-1287

Service Manual

Linear Phase Speaker System

* The model SB-X5(XG) is available in European only.
* The model SB-X5(XGF) is available in France only.
* The model SB-X5K(XG) is available in European only.
* The model SB-X5K is of black finish.

SB-X5 (XG),(XGF)
SB-X5K (XG)



■ SPECIFICATIONS

(Specifications are subject to change without notice for further improvement.)

Type:	3-way,3-speaker bass-reflex system
Speakers:	Woofer: 25cm cone type Midrange: 9cm cone type Tweeter: 2.5cm titanium dome type
Impedance:	6 ohms
Input power:	50W (DIN RMS) 120W (peak)
Output sound-pressure level:	89.0dB/W (at 1.0m)
Crossover Frequency:	1000Hz, 4200Hz
Frequency Range:	39～20kHz (−10dB)
Dimensions:	34.0(W)×61.0(H)×32.6(D) cm 13-3/8"(W)×24"(H)×12-7/8"(D)
Weight:	19kg (41.9 lbs)

■ TECHNISCHE DATEN

(Spezifikationen können infolge von Verbesserungen ohne Ankündigund geändert werden.)

Typ:	System mit 3 Lautsprechern und 3 Bereichen
Lautsprecher:	25-cm-Tieftonlautsprecher Konustyp 2.5-cm-titan-domtyp
Impedanz:	6 Ohm
Spitzenbelastbaikeit:	50W (DIN RMS) 120W (Spitze)
Abgegebener schalldruckpegel:	89dB/ W (im Abstand von 1m)
Überschneidungs-frequenz:	1000Hz, 4200Hz
Frequenzumfang:	39～20kHz (−10dB)
Abmessungen:	34.0(L)×61.0(H)×32.6(D) cm 13-3/8"(L)×24"(H)×12-7/8"(D)
Gewicht:	19kg (41.9 lbs)

■ CARACTERISTIQUES TECHNIQUES

(Sujet á changement sans préaris.)

Type:	Système à 3 hauts-parleurs et 3 canaux avec bass-reflex
Hauts-parleurs:	Woofer: 25cm à cône Tweeter: 2.5cm typede dôme em titane
Impédance:	6 ohms
Entrée maximale instantanée:	50W (DIN RMS) 120W (pointe)
Pression du niveau sonore de sortie:	89dB/W (à 1m)
Fréquence de commutation:	1000Hz, 4200Hz
Gamme de fréquences:	39～20kHz (−10dB)
Dimensions:	34.0(L)×61.0(H)×32.6(D) cm 13-3/8"(W)×24"(H)×12-7/8"(D)
Poids:	19kg (41.9 lbs)

National Technics

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

■ POWER HANDLING CAPACITY

- The power handling capacity of this speaker system is 120 watts (music), and 50 watts DIN (RMS). This means that the speaker system can easily handle an effective output from an amplifier of about 120 watts (at an 8-ohm load, with both channels used).
- Even when an amplifier with an effective output of, for example, less than 120 watts is used, however, the speaker-protection circuitry may automatically function as a result of "clipping" of the output signal from the amplifier (if distortion is especially noticeable), and the output signal may be thereby interrupted.
- If the sound from the speaker system is interrupted in this way by the speaker-protection circuitry while listening, it means that excessive input, or an unusual input signal (a distorted signal), is being applied to the speaker system. If this occurs, check the audio equipment (sound source) being used for an abnormal condition, and reduce the amplifier volume level to prevent the speaker-protection circuitry from functioning again.
- For correct use of the speaker-protection circuitry, be sure to carefully read the following information.
- There is a certain power handling capacity of this speaker system with respect to ordinary music sources. If an oscillator or test record is used, be sure never to apply a sine wave exceeding 10 watts.
- If the following special types of signals are applied to the speaker system, be sure to reduce the volume level of the amplifier.
  1. Interstation hiss on the FM broadcast band.
  2. Output from a tape deck during fast forward or rewind.
  3. Acoustic feedback from a microphone or an electric musical instrument.
  4. "Shock" noise which occurs when the power switch of the amplifier, etc. is turned on or off, when input or output connection cords are connected or disconnected, or when a phono cartridge is replaced.

  Use the speaker system with care to avoid damage by any of the above.

■ SPEAKER PROTECTION CIRCUITRY

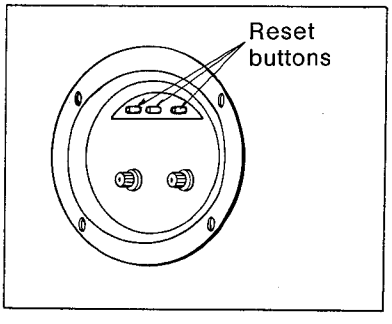
The power handling capacity of this speaker system is determined as described above depending upon the input signal. However, when an excessive or abnormal input signal is accidentally applied to this speaker system, the built-in speaker-protection circuitry will function to interrupt the input signal in order to protect the speaker units.

This speaker-protection circuitry is mounted on the terminal panel at the rear of the speaker system. The reset buttons on the terminal panel are for resetting to the normal condition after the protection circuitry has functioned to interrupt the input signal.

To operate the speaker-protection circuitry, please note the following instructions.

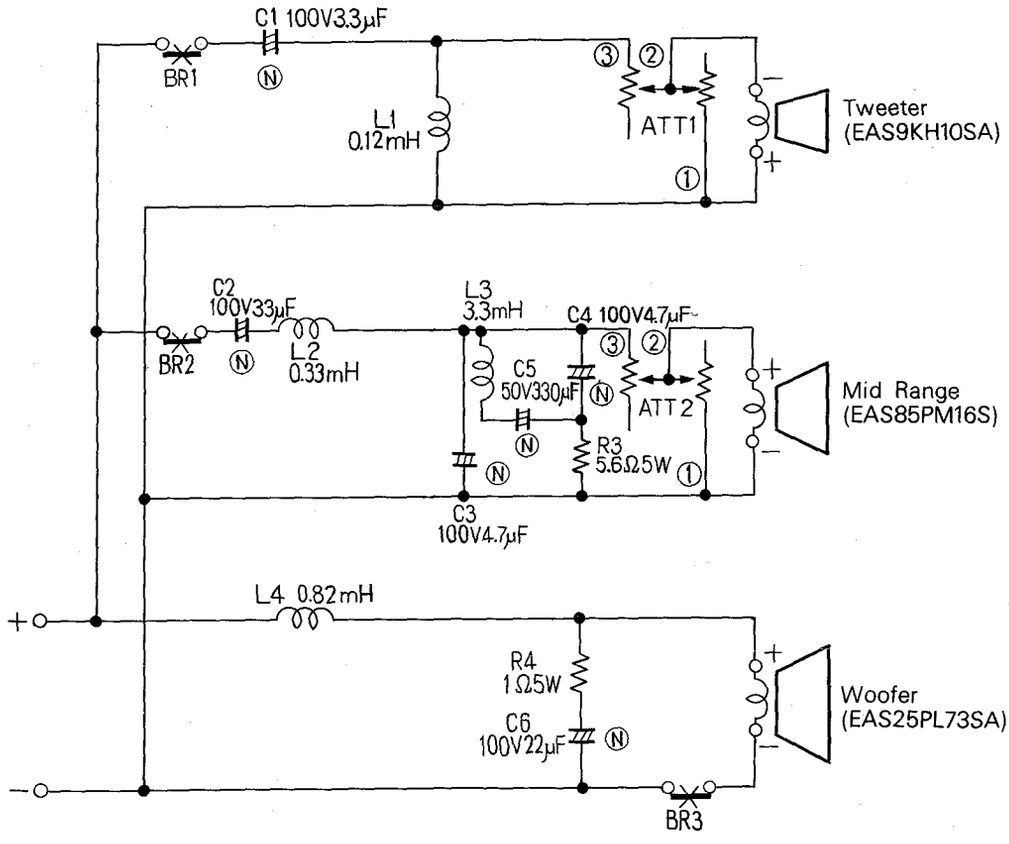
1. Before making connection to the amplifier, be sure to push the reset buttons on the terminal panel.
2. If sounds change or are interrupted suddenly while using your speaker system:
   1. Reduce the amplifier volume.
   2. Check to be sure all equipment is functioning properly.
   3. Wait for about 20 seconds.
   4. Push the reset buttons.
   5. After resetting the protection circuitry, reduce the amplifier volume to a level slightly lower than before.

The speaker-protection circuitry will function at a slightly different time depending upon the type of music because the energy spectrum is different for each type of music.

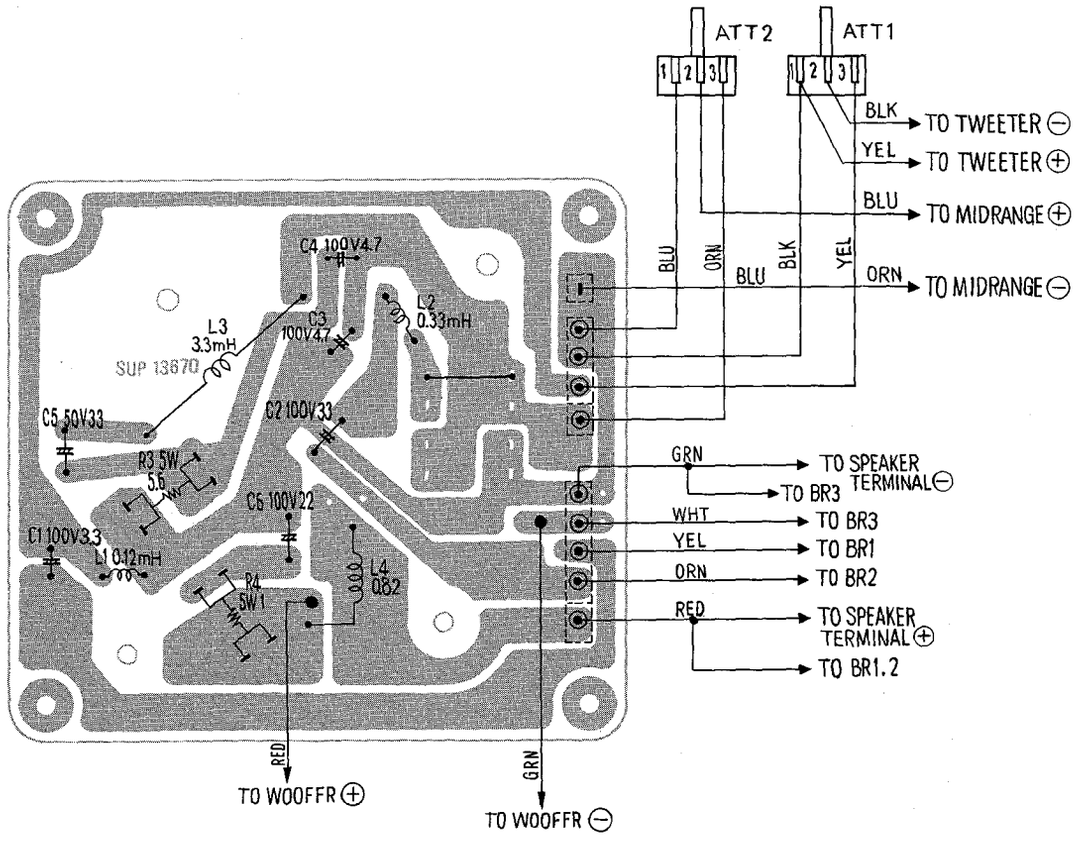


■ SCHEMATIC DIAGRAM

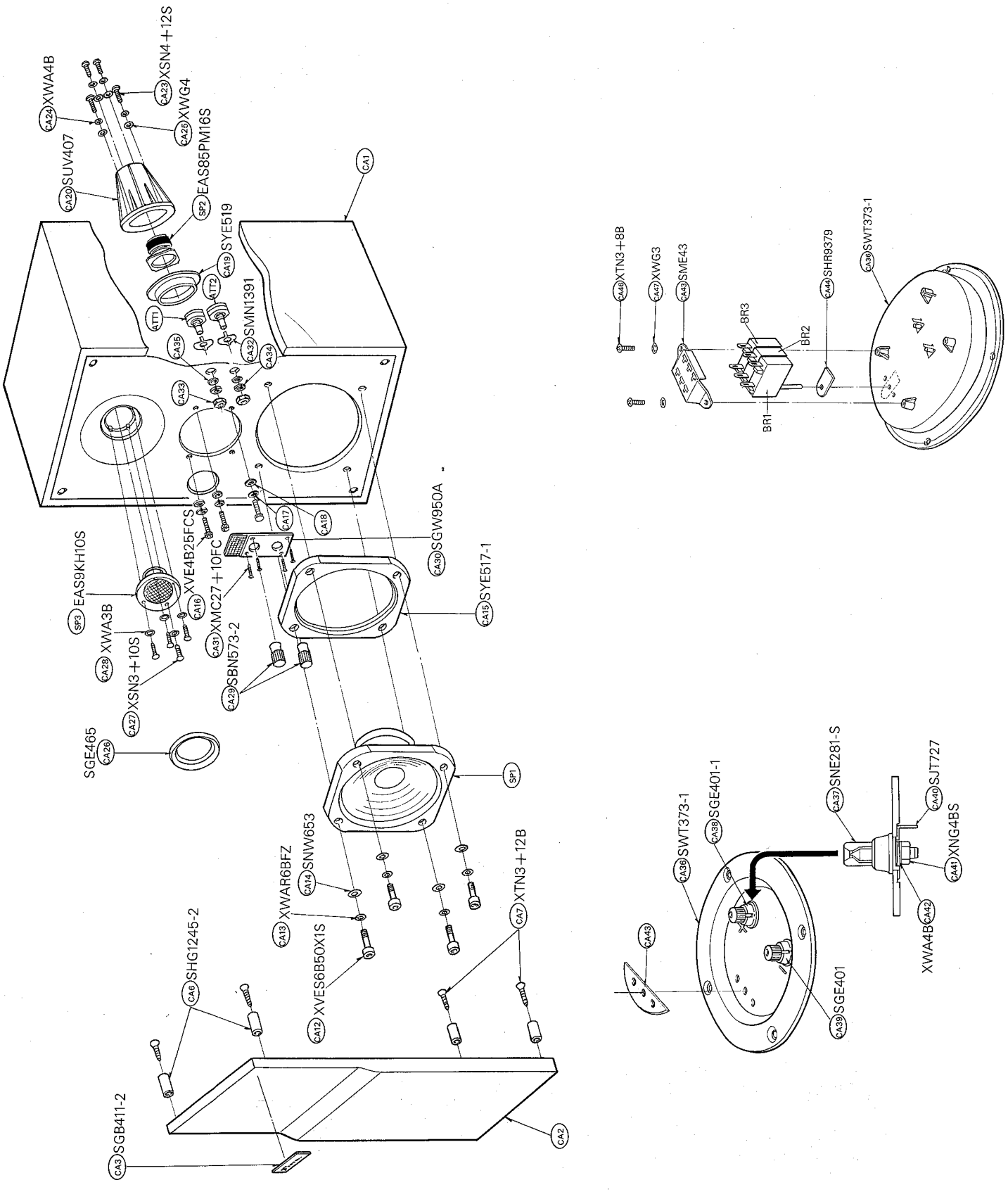
(This schematic diagram may be modified at any time with the development of new technology.)



■ CIRCUIT BOARD



■ EXPLODED WIEW



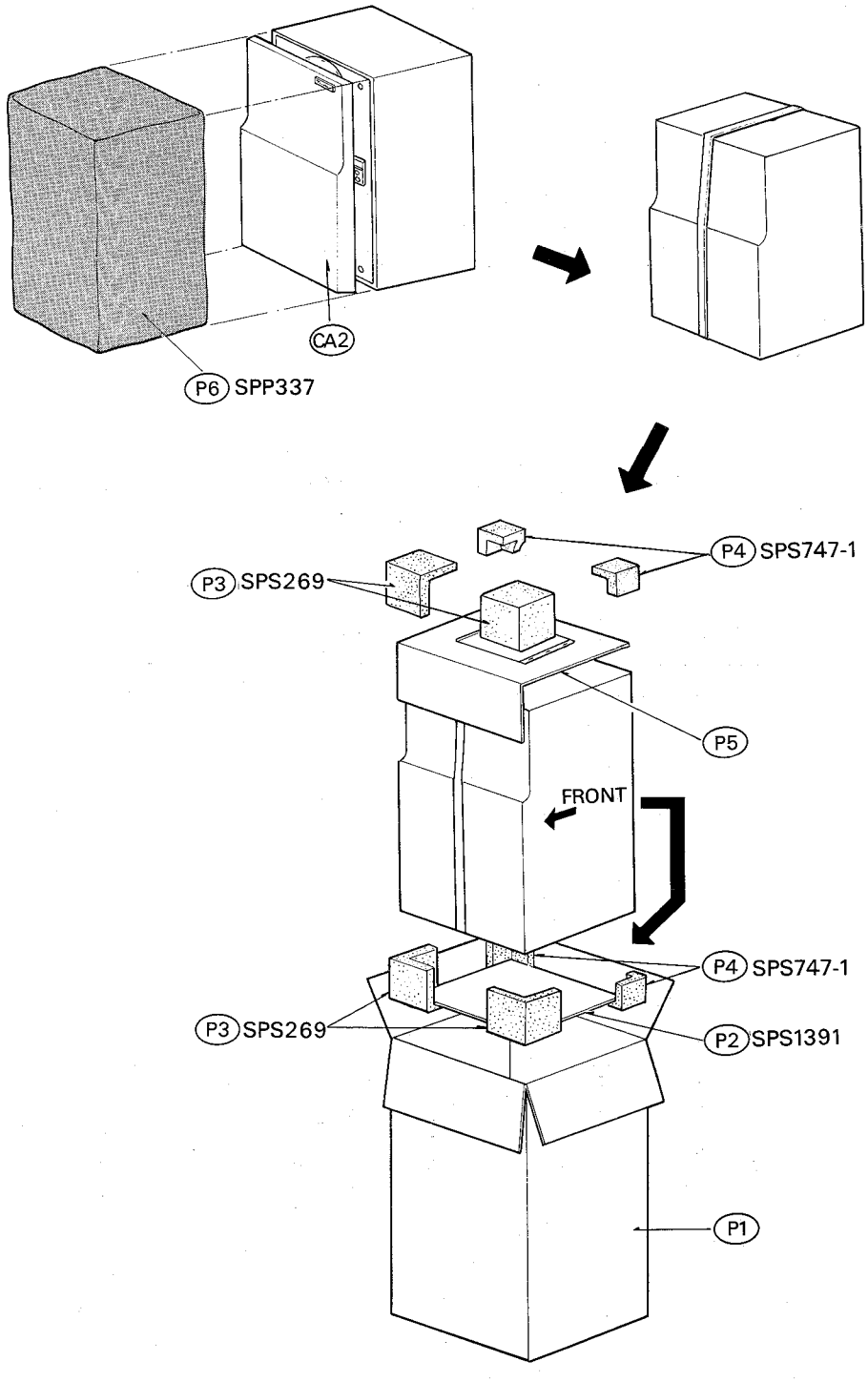
■ REPLACEMENT PARTS LIST

SB-X5(XG) → (XG)　　SB-X5K(XG) → (KXG)
SB-X5(XGF) → (XGF)

NOTE: 1. Part numbers are indicated on most mechanical parts.
Please use this part number for parts orders.

Ref. No.	Part No.	Part Name & Description	Per Set		Remarks
		COILS			
L1	SLCA121KU	Coil, Choke, 0.12mH	1		
L2	SLCA331KU	Coil, Choke, 0.33mH	1		
L3	SLCA332KU	Coil, Choke, 3.3mH	1		
L4	SLCA821KU	Coil, Choke, 0.82mH	1		
		RESISTORS			
R3	ERF5ZK5R6B	Wire Wound, 5.6Ω, 5W, ±10%	1		○
R4	ERF5ZK1R0B	Wire Wound, 1Ω, 5W, ±10%	1		○
		CAPACITORS			
C1	ECEA100Y3R3	Electrolytic, 3.3μF, 100V	1		○
C2	ECEA100Y33	Electrolytic, 33μF, 100V	1		○
C3, 4	ECEA100Y4R7	Electrolytic, 4.7μF, 100V	2		
C5	ECEA50N330M	Electrolytic, 330μF, 50V	1		
C6	ECEA100Y22	Electrolytic, 22μF, 100V	1		○
		ATTENUATORS			
ATT1, 2	EVWB1AF27Z80	Attenuator	2		
		BREAKERS			
BR1	SSB16AB01	Breaker, Tweeter	1		○
BR2	SSB16AB01	Breaker, Midrange	1		○
BR3	SSB16AB01	Breaker, Woofer	1		○
		SPEAKERS			
SP1	EAS25PL73SA	Woofer, Speaker	1		○
SP2	EAS85PM16S	Midrange, Speaker	1		○
SP3	EAS9KH10SA	Tweeter, Speaker	1		○
		CABINET PARTS			
CA1 (XG,XGF)	SKA9915W	Cabinet	1		○
CA1 (KXG)	SKA9913W	Cabinet (Black)	1		○
CA2	SYB545-1	Speaker Grill	1		○
CA3	SGB411-2	Badge, Speaker Grill	1		*
CA4	SNW303	Washer, Badge	1		
CA5	SNE423	Net, Badge	1		
CA6	SHG1245-2	Net Catch	4		
CA7	XTS3+12B	Screw, Net Catch	4		
CA8	SHR975	Spacer, Choke Coil	1		
CA9	SHR9323	Spacer, Choke Coil	3		
CA10	XSN3+30S	Screw, Choke Coil	4		
CA11	SNE491	Nut, Choke Coil	4		
CA12	XVES6B50X1S	Bolt, Woofer	4		○
CA13	XWAR6BFZ	Washer, Woofer	4		
CA14	SNW653	Washer, Woofer	4		
CA15	SYE517-1	Spacer, Woofer	1		○
CA16	XVE4B25FCS	Bolt, Midrange	4		○
CA17	XWA4BFC	Washer, Midrange	4		
CA18	SNW423-1	Washer, Midrange	4		
CA19	SYE519	Horn, Midrange	1		○
CA20	SUV407	Cover, Midrange	1		○
CA21	SHG1435	Bushing, Midrange Cover	1		
CA22	SHR9221-8	Spacer, Midrange Cover	1		○
CA23	XSN4+12S	Screw, Midrange Cover	4		
CA24	XWA4B	Washer, Midrange Cover	4		
CA25	XWG4	Washer, Midrange Cover	4		
CA26	SGE465	Rubber, Tweeter	1		
CA27	XSN3+10S	Screw, Tweeter	4		
CA28	XWA3B	Washer, Tweeter	4		
CA29	SBN573-2	Knob, Attenuator	2		○
CA30	SGW950-1A	Panel, Attenuator	1		○
CA31	XMC27+10FC	Screw, Attenuator Panel	4		○
CA32	SMN1391	Bracket, Attenuator	2		
CA33	XNGS9CFZ	Nut, Attenuator	2		
CA34	XWY9FZ	Washer, Attenuator	2		
CA35	XWG9E15FZ	Washer, Attenuator	2		
CA36	SWT373-1	Plate, Speaker Terminal	1		○
CA37	SNE281-1S	Knob, Speaker Terminal	2		
CA38	SGE401-1	Ornament, Speaker Terminal Knob (Orange)	1		
CA39	SGE401	Ornament, Speaker Terminal Knob(Black)	1		
CA40	SJT727	Terminal Strip	2		
CA41	XNG4BS	Nut, Speaker Terminal	2		
CA42	XWA4B	Washer, Speaker Terminal	2		
CA43	SGK1017-1	Name Plate, Curcuit Breaker	1		○
CA44	SHR9379	Spacer, Breaker	1		○
CA45	SME43	Bracket, Breaker	1		○
CA46	XTN3+8B	Screw, Bracket	2		
CA47	XWG3	Washer, Bracket	2		
CA48	SGT15970	Name Plate	1		* ○
CA49	SQX4611	Caution, Circuit Breaker	1		○
		ACCESSORY PARTS			
A1	SQF1805	Instruction Book	1		○
A2	SWX291	Cord, Speaker	1		
		PACKING MATERIALS			
P1 (XG)	SPG1353-1	Carton	1		○
P1 (XGF)	SPG1353-2	Carton	1		○
P1 (KXG)	SPG1353-3	Carton	1		○
P2	SPS1391	Pad, Bottom	1		
P3	SPS269	Pad, Corner, Front	4		
P4	SPS747-1	Pad, Corner, Rear	4		
P5	SPS1389	Pad, Top	1		
P6	SPP337	Polyethylene Bag	1		

■ PACKINGS



Printed in Japan
7711-4900 Ⓚ

ORDER NO. SD7806-1384

Service Manual

SB-X5K

Linear Phase Speaker System

SB-X5K (XGB)

* The model SB-X5K (XGB) is available in W.Germany only.

■ SPECIFICATIONS

(Specifications are subject to change without notice for further improvement.)

Type:	3-way,3-speaker bass-reflex system
Speakers:	Woofer: 25cm cone type Midrange: 8.5cm cone type Tweeter: 2.5cm dome type
Impedance:	6 ohms
Input power:	50W (DIN RMS) 120W (Music)
Output sound-pressure level:	89.0dB/W (at 1.0m)
Crossover Frequency:	1000Hz, 4200Hz
Frequency Range:	39～20kHz (—10dB)
Dimensions:	34.0(W)×61.0(H)×32.2(D) cm 13-3/8"(W)×24"(H)×12-43/64"(D)
Weight:	17kg (37.4 lbs)

■ TECHNISCHE DATEN

(Spezifikationen können infolge von Verbesserungen ohne Ankündigund geändert werden.)

Typ:	System mit 3 Lautsprechern und 3 Bereichen
Lautsprecher:	25-cm-Tieftonlautsprecher Konustyp 8.5-cm-Tieftonlautsprecher Konustyp 2.5-cm-domtyp
Impedanz:	6 Ohm
Spitzenbelastbaikeit:	50W (DIN RMS) 120W (Spitze)
Abgegebener schalldruckpegel:	89dB/ W (im Abstand von 1m)
Überschneidungs-frequenz:	1000Hz, 4200Hz
Frequenzumfang:	39～20kHz (—10dB)
Abmessungen:	34.0(L)×61.0(H)×32.2(D) cm 13-3/8"(L)×24"(H)×12-43/64"(D)
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Technics

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P.O. Box 288, Central Osaka Japan

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■ SPEAKER PROTECTION CIRCUITRY

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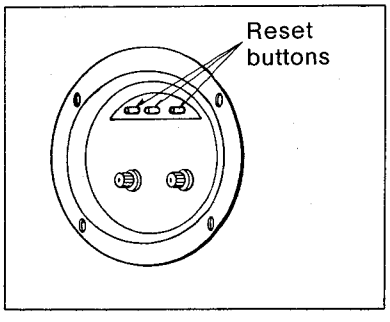
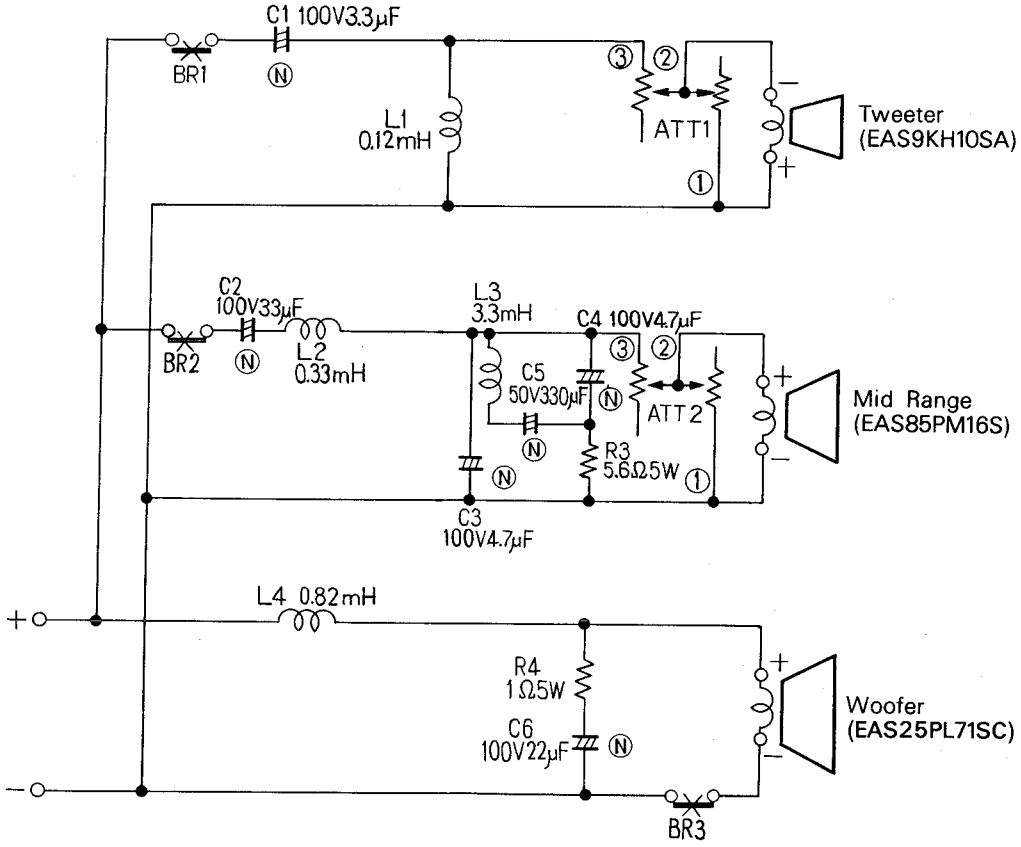
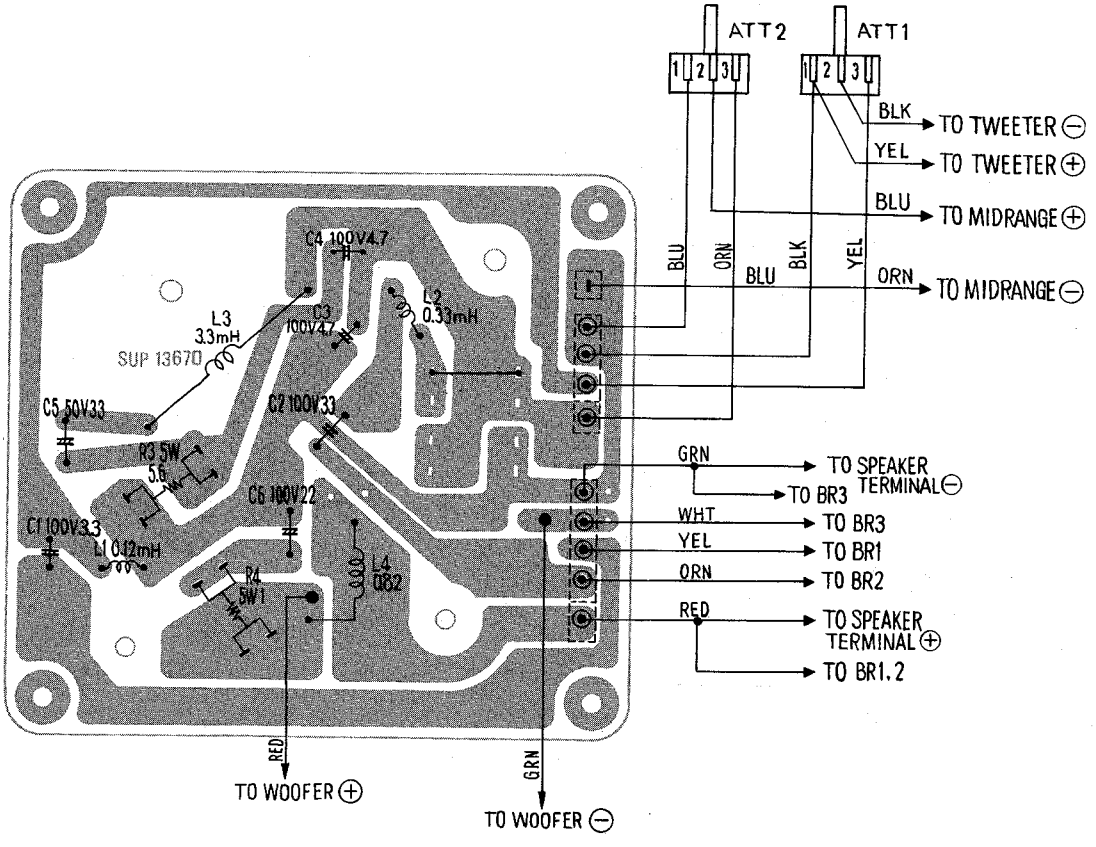


■ SCHEMATIC DIAGRAM

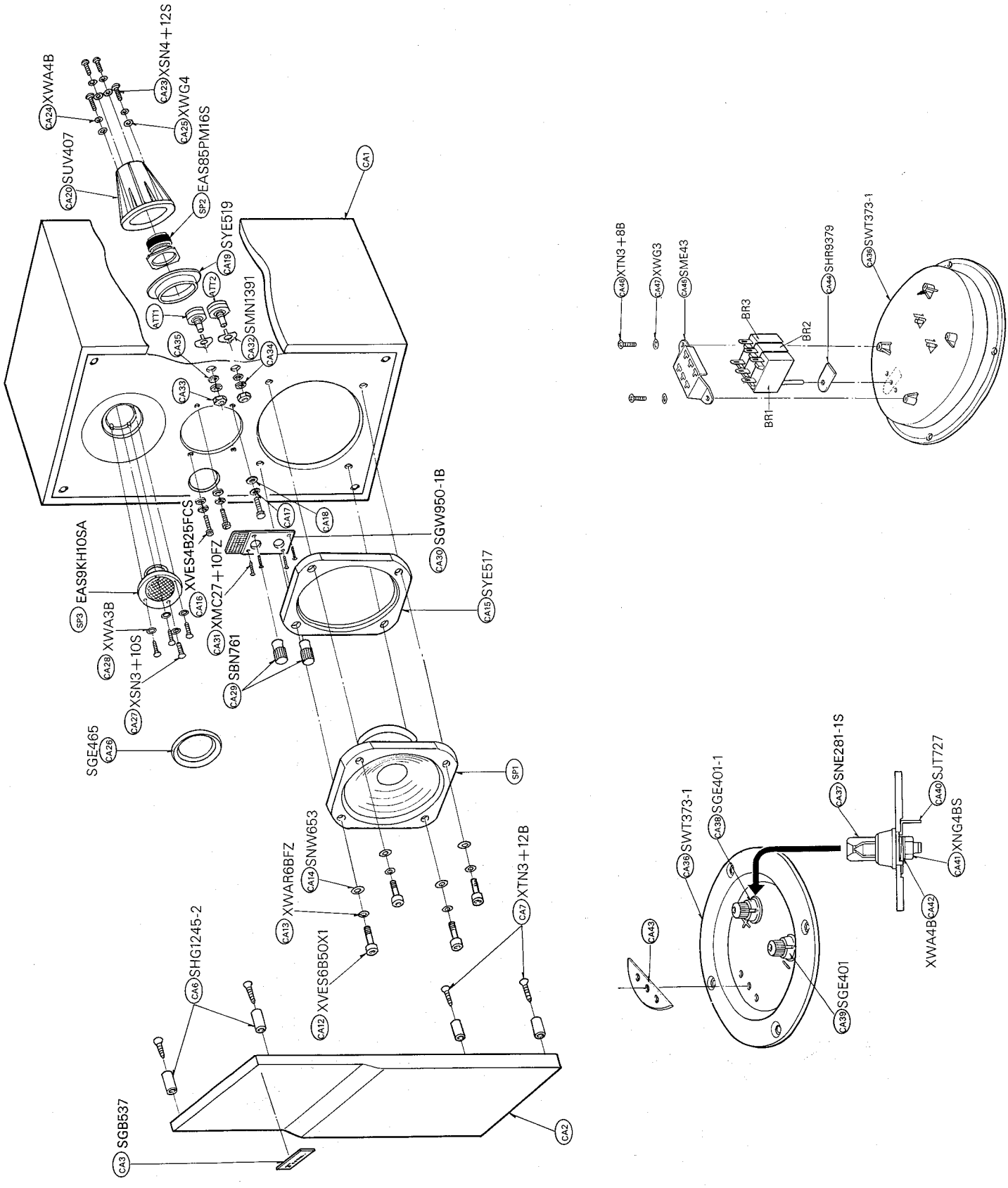
(This schematic diagram may be modified at any time with the development of new technology.)



■ CIRCUIT BOARD



■ EXPLODED WIEW

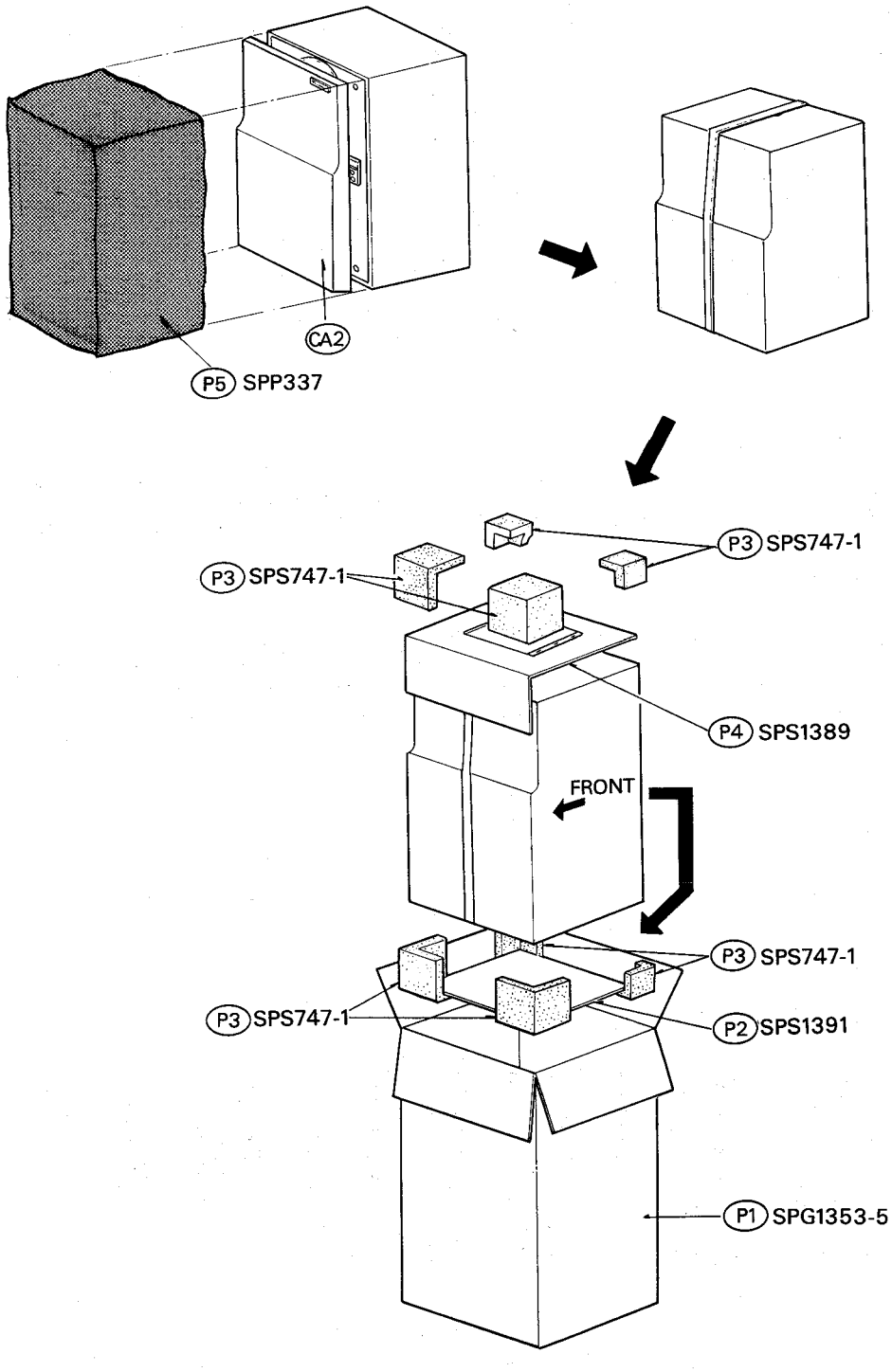


■ REPLACEMENT PARTS LIST

NOTE: 1. Part numbers are indicated on most mechanical parts.
Please use this part number for parts orders.

Ref. No.	Part No.	Part Name & Description	Per Set		Remarks
		COILS			
L1	SLCA121KU	Coil, Choke, 0.12mH	1		
L2	SLCA331KU	Coil, Choke, 0.33mH	1		
L3	SLCA332KU	Coil, Choke, 3.3mH	1		
L4	SLCA821KU	Coil, Choke, 0.82mH	1		
		RESISTORS			
R3	ERF5ZK5R6B	Wire Wound, 5.6Ω, 5W, ±10%	1		○
R4	ERF5ZK1R0B	Wire Wound, 1Ω, 5W, ±10%	1		○
		CAPACITORS			
C1	ECEA100Y3R3	Electrolytic, 3.3μF, 100V	1		○
C2	ECEA100Y33	Electrolytic, 33μF, 100V	1		○
C3, 4	ECEA100Y4R7	Electrolytic, 4.7μF, 100V	2		
C5	ECEA50N330M	Electrolytic, 330μF, 50V	1		
C6	ECEA100Y22	Electrolytic, 22μF, 100V	1		○
		ATTENUATORS			
ATT1, 2	EVWB1AF27Z80	Attenuator	2		
		BREAKERS			
BR1	SSB16AB01	Breaker, Tweeter	1		○
BR2	SSB16AB01	Breaker, Midrange	1		○
BR3	SSB16AB01	Breaker, Woofer	1		○
		SPEAKERS			
SP1	EAS25PL71SC	Woofer, Speaker	1		○
SP2	EAS85PM16S	Midrange, Speaker	1		
SP3	EAS9KH10SA	Tweeter, Speaker	1		
		CABINET PARTS			
CA1	SKA10491W	Cabinet (Black)	1		○
CA2	SYB545-5	Speaker Grille	1		○
CA3	SGB537	Badge, Speaker Grille	1		*
CA6	SHG1245-2	Net Catch	4		
CA7	XTN3+12B	Screw, Net Catch	4		
CA9	SHR9323	Spacer, Choke Coil	4		
CA10	XSN3+30S	Screw, Choke Coil	4		
CA11	SNE491	Nut, Choke Coil	4		
CA12	XVES6B50X1	Bolt, Woofer	4		○
CA13	XWAR6BFZ	Washer, Woofer	4		
CA14	SNW653	Washer, Woofer	4		
CA15	SYE517	Spacer, Woofer	1		○
CA16	XVES4B25X1S	Bolt, Midrange	4		○
CA17	XWA4BFZ	Washer, Midrange	4		
CA18	SNW429-1	Washer, Midrange	4		
CA19	SYE519	Horn, Midrange	1		○
CA20	SUV407	Cover, Midrange	1		○
CA21	SHG1435	Bushing, Midrange Cover	1		
CA22	SHR9221-8	Spacer, Midrange Cover	1		○
CA23	XSN4+12S	Screw, Midrange Cover	4		
CA24	XWA4B	Washer, Midrange Cover	4		
CA25	XWG4	Washer, Midrange Cover	4		
CA26	SGE465	Rubber, Tweeter	1		
CA27	XSN3+10S	Screw, Tweeter	4		
CA28	XWA3B	Washer, Tweeter	4		
CA29	SBN761	Knob, Attenuator	2		○
CA30	SGW950-1B	Panel, Attenuator	1		○
CA31	XMC27+10FZ	Screw, Attenuator Panel	4		○
CA32	SMN1391	Bracket, Attenuator	2		
CA33	XNGS9CFZ	Nut, Attenuator	2		
CA34	XWV9FZ	Washer, Attenuator	2		
CA35	XWG9E15FZ	Washer, Attenuator	2		
CA36	SWT373-1	Plate, Speaker Terminal	1		○
CA37	SNE281-1S	Knob, Speaker Terminal	2		
CA38	SGE401-1	Ornament, Speaker Terminal Knob (Orange)	1		
CA39	SGE401	Ornament, Speaker Terminal Knob(Black)	1		
CA40	SJT727	Terminal Strip	2		
CA41	XNG4BS	Nut, Speaker Terminal	2		
CA42	XWA4B	Washer, Speaker Terminal	2		
CA43	SGK1017-1	Name Plate, Curcuit Breaker	1		○
CA44	SHR9379	Spacer, Breaker	1		○
CA45	SME43	Bracket, Breaker	1		○
CA46	XTN3+8B	Screw, Bracket	2		
CA47	XWG3	Washer, Bracket	2		
CA48	SGT17750	Name Plate	1	*	○
CA49	SQX4611-1	Caution, Circuit Breaker	1		○
		ACCESSORY PARTS			
A1	SQF10013	Instruction Book	1		○
A2	SWX291	Cord, Speaker	1		
		PACKING MATERIALS			
P1	SPG1353-5	Carton	1		○
P2	SPS1391	Pad, Bottom	1		
P3	SPS747-1	Pad, Corner	8		
P4	SPS1389	Pad, Top	1		
P5	SPP337	Polyethylene Bag	1		

■ PACKINGS



Printed in Japan
78062100 Ⓚ

ORDER NO. SD7811-1478

Service Manual

SB-X5

Linear Phase Speaker System

SB-X5 (AFEE)

* The model SB-X5(AFEE) is available in European Audio Club only.

For additional information, please refer to the service manual for Model No. SB-X5(XFEE).

Notes: * This service manual includes only the additional information for the original service manual of model **SB-X5(XFEE)(ORDER NO. SD7807-1426).**
* This service manual issue should be filed with the original service manual **SB-X5(XFEE).**
* When servicing model **SB-X5(AFEE),** this service manual and the original one should be referred.

MODIFICATIONS-1

■ SPECIFICATIONS (Page 1)

SB-X5(XFEE)		SB-X5(AFEE)	
Impedance:	6 ohms	**Impedance:**	8 ohms
Input power:	50W (DIN RMS)	**Input power:**	90W (DIN RMS)
	120W (Music)		130W (Music)

MODIFICATIONS-2

■ REPLACEMENT PARTS LIST (Page 5)

Ref. No.	Change of Part No. SD7807-1426 ➡ SB-X5 (AFEE)		Part Name & Description	Per Set		Remarks
CABINET PARTS						
CA48	SGT15970	SGT19750	Name Plate	1		* ○
ACCESSORY PARTS						
A1	SQF1805	SQF1805-1	Instruction Book	1		○
PACKING MATERIALS						
P1	SPG1353-7	SPG2015-3	Carton	1		○

Technics

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Service Manual

Linear Phase Speaker System

SB-X5 (XGA),(XGFA)

SB-X5K (XGA)

* The model SB-X5(XGA) is available in European, Asia, Latin America, Middle East and Africa only.
* The model SB-X5(XGFA) is available in France only.
* The model SB-X5K(XGA) is available in European only.
* The model SB-X5K is of black finish.

For additional information, please refer to the service manual for Model No. SB-X5(XG), (XGF)/SB-X5K(XG).

Notes: * This service manual includes only the additional information for the original service manual of model **SB-X5(XG),(XGF)/SB-X5K(XG)(ORDER NO. SD7711-1287).**
* This service manual issue should be filed with the original service manual **SB-X5(XG), (XGF)/SB-X5K(XG).**
* When servicing model **SB-X5(XGA),(XGFA)/SB-X5K(XGA),** this service manual and the original one should be referred.

MODIFICATIONS-1

- **SPECIFICATIONS (Page 1)**
- **TECHNISCHE DATEN**
- **CARACTERISTIQUES TECHNIQUES**

SB-X5(XG),(XGF) SB-X5K(XG)			**SB-X5(XGA),(XGFA) SB-X5K(XGA)**	
Impedance:	6 ohms	➡	**Impedance:**	8 ohms
Input power:	50W (DIN RMS) 120W (Music)		**Input power:**	90W (DIN RMS) 130W (Music)
Impedanz:	6 Ohm	➡	**Impedanz:**	8 Ohm
Spitzenbelast-baikeit:	50W (DIN RMS) 120W (Music)		**Spitzenbelast-baikeit:**	90W (DIN RMS) 130W (Music)
Impédance:	6 ohms	➡	**Impédance:**	8 ohms
Entrée maximale instantanée:	50W (DIN RMS) 120W (Music)		**Entrée maximale instantanée:**	90W (DIN RMS) 130W (Music)

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